WHAT IS CLAIMED IS:

1. A method for detecting a heat generating failure in a semiconductor device having an unpassivated surface comprising the steps of:

applying a coating to said unpassivated surface of said semiconductor device, wherein said coating is non-electrically conducting and capable of localizing heat generated by said failure in a particular area;

biasing said semiconductor device; and

detecting said failure by detecting a location of said heat generated by said failure in said coating.

2. The method as recited in claim 1, wherein said coating comprises a high flash point and a low vapor pressure.

3. The method as recited in claim 1, wherein said coating comprises a liquid.

4. The method as recited in claim 1, wherein said coating comprises silicon dioxide.

5. The method as recited in claim 4, wherein said coating has a thickness of approximately two microns.

6. A semiconductor device comprising:

an unpassivated surface;

a failure, wherein said failure being a heat generating failure; and

a coating on said unpassivated surface, wherein said coating is non-electrically conducting and capable of localizing heat generated by said failure in a particular area of said coating, wherein said failure is detected by detecting a location of said heat generated by said failure in said coating.

7. The semiconductor device as recited in claim 6, wherein said coating comprises a high flash point and a low vapor pressure.

8. The semiconductor device as recited in claim 6, wherein said coating comprises a layer of liquid.

9. The semiconductor device as recited in claim 6, wherein said coating comprises silicon dioxide.

10. The semiconductor device as recited in claim 9, wherein said coating has a thickness of approximately two microns.